

Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 High Directivity LGA Type



GENERAL DESCRIPTION

ITF (INTEGRATED THIN-FILM) TECHNOLOGY

The ITF LGA Coupler is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

APPLICATIONS

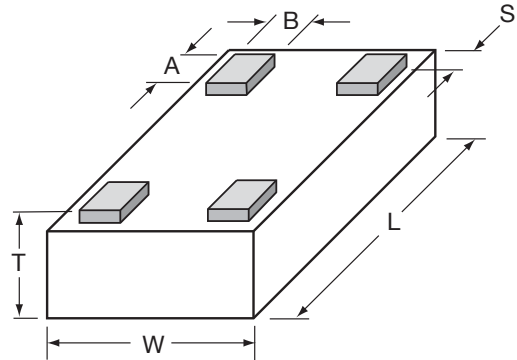
- 4G LTE
- 5G LTE
- Base Stations.
- Automotive
- Industrial
- Mobile Communications
- Satellite TV Receivers
- GPS
- Vehicle Location Systems
- Wireless LAN's

FEATURES

- Inherent Low Profile
- Self Alignment during Reflow
- Excellent Solderability
- Low Parasitics
- Better Heat Dissipation
- Operating/Storage Temp
-40°C to +85°C
- Power Rating 5W RF Cont

DIMENSIONS: (Bottom View)

millimeters (inches)



| | |
|----------|----------------------------|
| L | 1.60±0.10 (0.063±0.004) |
| W | 0.84±0.10 (0.033±0.004) |
| T | 0.60±0.10 (0.024±0.004) |

| | |
|----------|----------------------------|
| A | 0.25±0.05 (0.010±0.002) |
| B | 0.20±0.05 (0.008±0.002) |
| S | 0.05±0.05 (0.002±0.002) |

HOW TO ORDER

| | | | | | | |
|---|---|------------------------------|---|----------------------------------|--|---|
| CP Style Directional Coupler | 0603 Size 0603 | X Type | **** Frequency MHz | X Sub-Type | N Termination Code L = LGA Sn90, Pb10 **N= LGA Sn100 | TR Packaging Code TR = Tape and Reel |
|---|---|------------------------------|---|----------------------------------|--|---|

**RoHS compliant

QUALITY INSPECTION

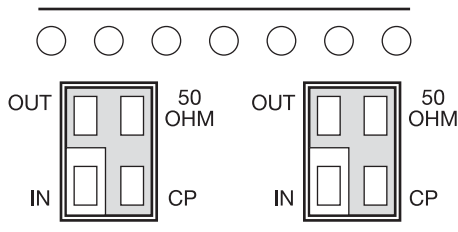
Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_R, 4 hours

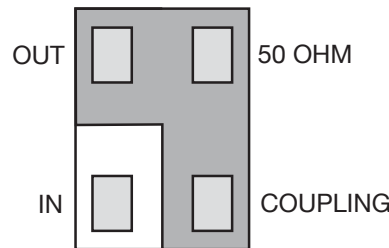
TERMINATION

Sn90Pb10 or Lead-Free Sn100 Nickel/Solder coating compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

ORIENTATION IN TAPE



TERMINALS (TOP VIEW)



Not RoHS Compliant



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT

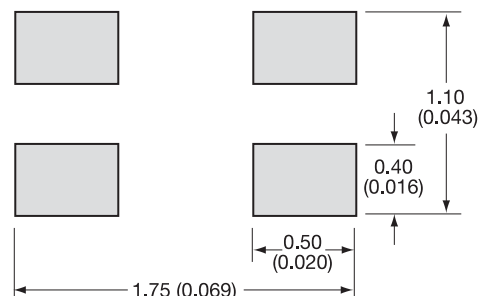


RoHS
COMPLIANT

For RoHS compliant products,
please select correct termination style.

Recommended Pad Layout Dimensions

mm (inches)



*The recommended distance to the PCB Ground Plane is 0.254mm (0.010")



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Thin-Film RF/Microwave Directional Couplers

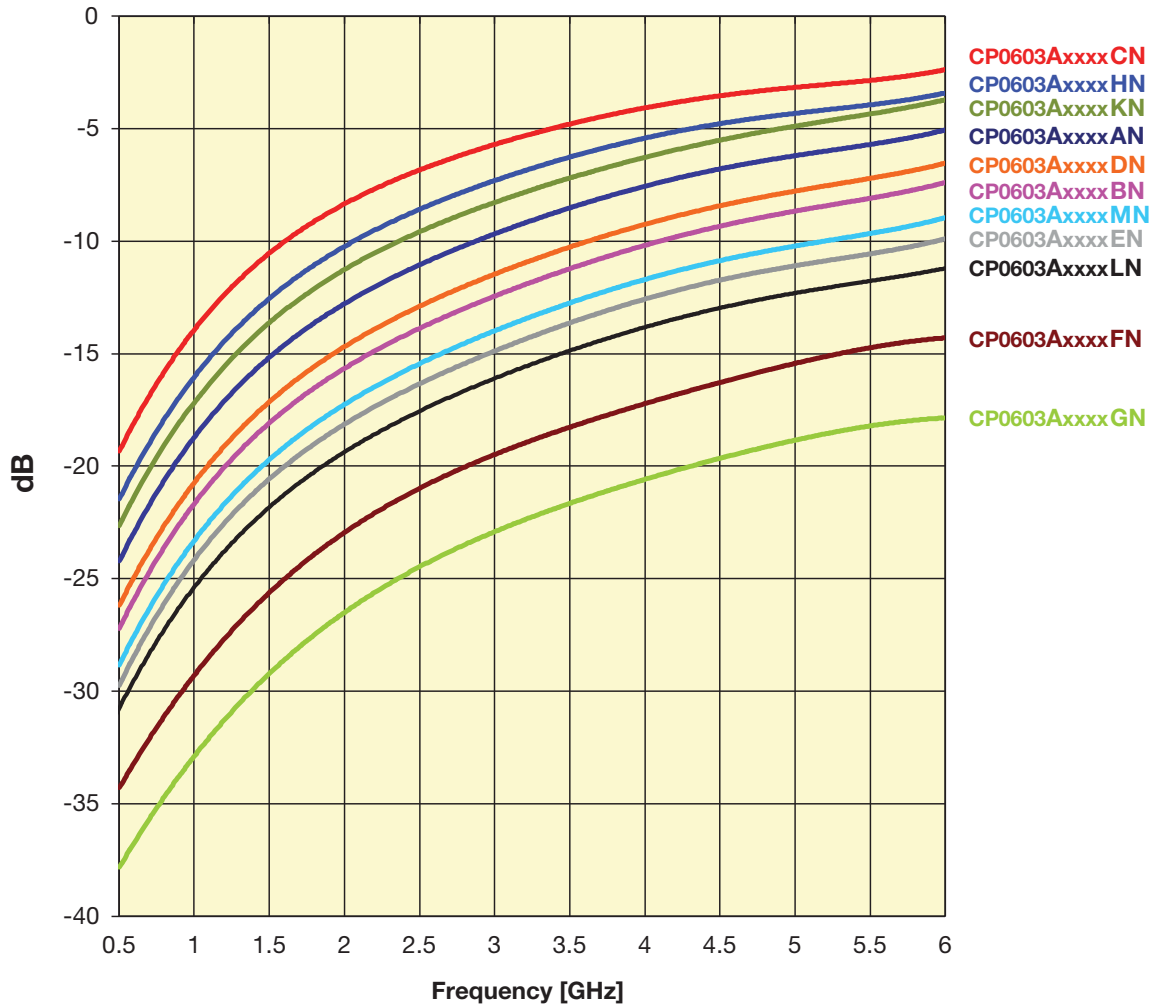
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 High Directivity LGA Type



CP0603 - TYPE SELECTION CHART

Coupling vs. Frequency



Intermediate coupling factors are readily available.
Please contact factory.

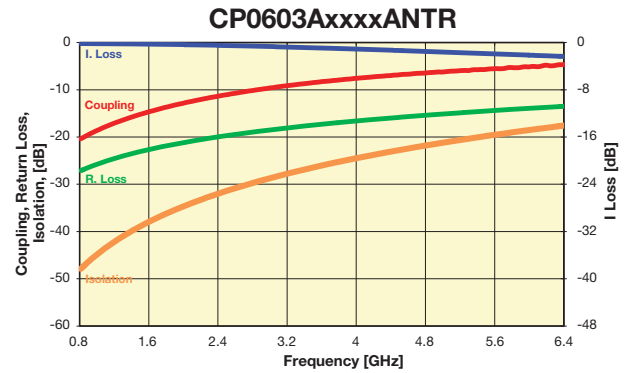
Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 High Directivity LGA Type

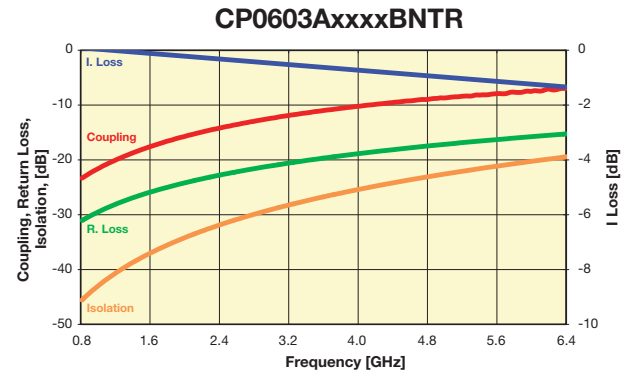
Coupler P/N CP0603AxxxxAn

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836AN | 824 - 849 | 20.0 | 0.25 | 28 | 22 |
| CP0603A0881AN | 869 - 894 | 19.7 | 0.25 | 28 | 22 |
| CP0603A0902AN | 890 - 915 | 19.4 | 0.25 | 27 | 22 |
| CP0603A0947AN | 935 - 960 | 19.0 | 0.25 | 27 | 22 |
| CP0603A0897AN | 880 - 915 | 19.4 | 0.25 | 28 | 22 |
| CP0603A0942AN | 925 - 960 | 19.0 | 0.25 | 27 | 22 |
| CP0603A1441AN | 1429 - 1453 | 15.5 | 0.40 | 24 | 22 |
| CP0603A1747AN | 1710 - 1785 | 14.0 | 0.50 | 22 | 22 |
| CP0603A1842AN | 1805 - 1880 | 13.5 | 0.50 | 22 | 22 |
| CP0603A1880AN | 1850 - 1910 | 13.2 | 0.50 | 22 | 22 |
| CP0603A1960AN | 1930 - 1990 | 13.0 | 0.55 | 21 | 22 |
| CP0603A1907AN | 1895 - 1920 | 13.2 | 0.50 | 22 | 22 |
| CP0603A1890AN | 1880 - 1900 | 13.2 | 0.50 | 22 | 22 |
| CP0603A2442AN | 2400 - 2484 | 11.5 | 0.75 | 20 | 22 |
| CP0603A3500AN | 3450 - 3550 | 8.6 | 1.3 | 17 | 20 |
| CP0603A5000AN | 4950 - 5050 | 6.1 | 2.2 | 13 | 14 |
| CP0603A5500AN | 5450 - 5550 | 5.5 | 2.5 | 15 | 13 |
| CP0603A6000AN | 5950 - 6050 | 5 | 3 | 11.6 | 13 |



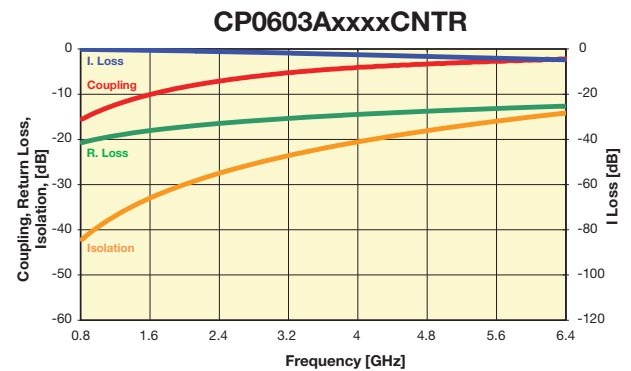
Coupler P/N CP0603AxxxxBN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836BN | 824 - 849 | 23.0 | 0.20 | 31 | 24 |
| CP0603A0881BN | 869 - 894 | 22.7 | 0.20 | 31 | 24 |
| CP0603A0902BN | 890 - 915 | 22.5 | 0.20 | 31 | 24 |
| CP0603A0947BN | 935 - 960 | 22.0 | 0.20 | 30 | 24 |
| CP0603A0897BN | 880 - 915 | 22.5 | 0.20 | 31 | 24 |
| CP0603A0942BN | 925 - 960 | 22.0 | 0.20 | 30 | 24 |
| CP0603A1441BN | 1429 - 1453 | 18.5 | 0.25 | 27 | 24 |
| CP0603A1747BN | 1710 - 1785 | 17.0 | 0.25 | 25 | 21 |
| CP0603A1842BN | 1805 - 1880 | 16.4 | 0.25 | 25 | 21 |
| CP0603A1880BN | 1850 - 1910 | 16.2 | 0.25 | 25 | 21 |
| CP0603A1960BN | 1930 - 1990 | 16.0 | 0.25 | 24 | 21 |
| CP0603A1907BN | 1895 - 1920 | 16.1 | 0.25 | 25 | 21 |
| CP0603A1890BN | 1880 - 1900 | 16.2 | 0.25 | 25 | 21 |
| CP0603A2442BN | 2400 - 2484 | 14.2 | 0.35 | 23 | 21 |
| CP0603A3500BN | 3450 - 3550 | 11.2 | 0.6 | 20 | 20 |
| CP0603A5000BN | 4950 - 5050 | 8.4 | 1.1 | 16.7 | 17 |
| CP0603A5500BN | 5450 - 5550 | 7.8 | 1.4 | 15.7 | 16 |
| CP0603A6000BN | 5950 - 6050 | 7.2 | 1.6 | 15 | 15 |



Coupler P/N CP0603AxxxxCN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836CN | 824 - 849 | 15.2 | 0.35 | 23 | 23 |
| CP0603A0881CN | 869 - 894 | 15.0 | 0.35 | 23 | 23 |
| CP0603A0902CN | 890 - 915 | 14.7 | 0.35 | 23 | 23 |
| CP0603A0947CN | 935 - 960 | 14.3 | 0.40 | 22 | 23 |
| CP0603A0897CN | 880 - 915 | 14.7 | 0.35 | 23 | 23 |
| CP0603A0942CN | 925 - 960 | 14.3 | 0.40 | 22 | 23 |
| CP0603A1441CN | 1429 - 1453 | 11.0 | 0.70 | 19 | 23 |
| CP0603A1747CN | 1710 - 1785 | 9.5 | 0.80 | 18 | 21 |
| CP0603A1842CN | 1805 - 1880 | 9.0 | 0.90 | 17 | 21 |
| CP0603A1880CN | 1850 - 1910 | 8.8 | 0.90 | 17 | 21 |
| CP0603A1960CN | 1930 - 1990 | 8.5 | 1.00 | 17 | 21 |
| CP0603A1907CN | 1895 - 1920 | 8.8 | 0.90 | 17 | 21 |
| CP0603A1890CN | 1880 - 1900 | 8.8 | 0.90 | 17 | 21 |
| CP0603A2442CN | 2400 - 2484 | 7.0 | 1.40 | 15 | 21 |
| CP0603A3500CN | 3450 - 3550 | 4.8 | 2.0 | 23 | 20 |
| CP0603A5000CN | 4950 - 5050 | 3.0 | 3.6 | 21 | 17 |
| CP0603A5500CN | 5450 - 5550 | 3.0 | 4.0 | 20.6 | 16 |
| CP0603A6000CN | 5950 - 6050 | 2.5 | 4.5 | 20.5 | 16 |



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

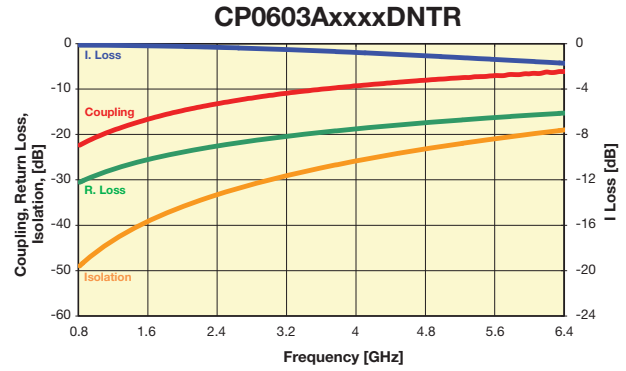
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 High Directivity LGA Type



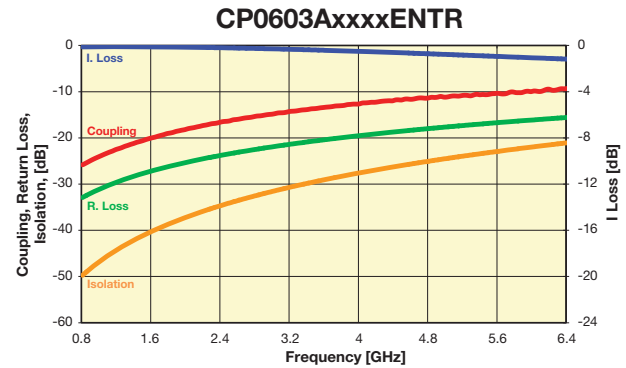
Coupler P/N CP0603AxxxxDN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836DN | 824 - 849 | 22.0 | 0.25 | 31 | 30 |
| CP0603A0881DN | 869 - 894 | 21.8 | 0.25 | 30 | 30 |
| CP0603A0902DN | 890 - 915 | 21.3 | 0.25 | 30 | 30 |
| CP0603A0947DN | 935 - 960 | 21.0 | 0.30 | 30 | 30 |
| CP0603A0897DN | 880 - 915 | 21.3 | 0.25 | 30 | 30 |
| CP0603A0942DN | 925 - 960 | 21.0 | 0.30 | 30 | 30 |
| CP0603A1441DN | 1429 - 1453 | 17.7 | 0.40 | 27 | 30 |
| CP0603A1747DN | 1710 - 1785 | 16.0 | 0.40 | 25 | 25 |
| CP0603A1842DN | 1805 - 1880 | 15.4 | 0.40 | 25 | 25 |
| CP0603A1880DN | 1850 - 1910 | 15.2 | 0.40 | 24 | 25 |
| CP0603A1960DN | 1930 - 1990 | 15.0 | 0.40 | 24 | 25 |
| CP0603A1907DN | 1895 - 1920 | 15.2 | 0.40 | 24 | 25 |
| CP0603A1890DN | 1880 - 1900 | 15.2 | 0.40 | 24 | 25 |
| CP0603A2442DN | 2400 - 2484 | 13.3 | 0.55 | 22 | 25 |
| CP0603A3500DN | 3450 - 3550 | 10.1 | 0.66 | 25.3 | 20 |
| CP0603A5000DN | 4950 - 5050 | 7.8 | 1.17 | 21.1 | 18 |
| CP0603A5500DN | 5450 - 5550 | 6.8 | 1.39 | 19.9 | 18 |
| CP0603A6000DN | 5950 - 6050 | 6.3 | 1.64 | 18.8 | 17 |



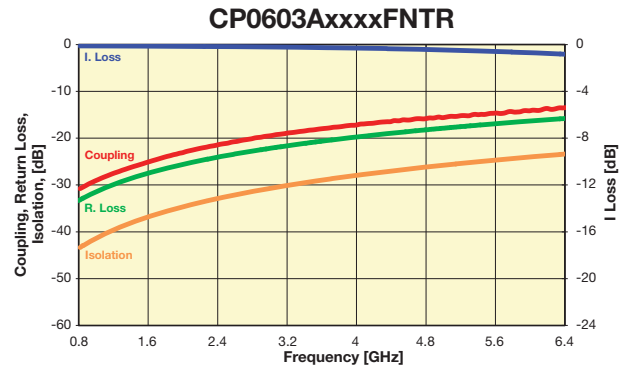
Coupler P/N CP603AxxxxEN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836EN | 824 - 849 | 25.8 | 0.20 | 32 | 21 |
| CP0603A0881EN | 869 - 894 | 25.3 | 0.20 | 32 | 21 |
| CP0603A0902EN | 890 - 915 | 25.0 | 0.20 | 32 | 21 |
| CP0603A0947EN | 935 - 960 | 24.7 | 0.20 | 31 | 21 |
| CP0603A0897EN | 880 - 915 | 26.0 | 0.20 | 32 | 21 |
| CP0603A0942EN | 925 - 960 | 24.7 | 0.20 | 31 | 21 |
| CP0603A1441EN | 1429 - 1453 | 22.0 | 0.25 | 28 | 21 |
| CP0603A1747EN | 1710 - 1785 | 19.5 | 0.30 | 26 | 21 |
| CP0603A1842EN | 1805 - 1880 | 19.0 | 0.30 | 26 | 21 |
| CP0603A1880EN | 1850 - 1910 | 18.8 | 0.30 | 26 | 21 |
| CP0603A1960EN | 1930 - 1990 | 18.5 | 0.30 | 26 | 21 |
| CP0603A1907EN | 1895 - 1920 | 18.7 | 0.30 | 26 | 21 |
| CP0603A1890EN | 1880 - 1900 | 18.8 | 0.30 | 26 | 21 |
| CP0603A2442EN | 2400 - 2484 | 17.0 | 0.40 | 24 | 21 |
| CP0603A3500EN | 3450 - 3550 | 13.2 | 0.5 | 18 | 20 |
| CP0603A5000EN | 4950 - 5050 | 10.7 | 0.9 | 13 | 16 |
| CP0603A5500EN | 5450 - 5550 | 10.2 | 1.2 | 12 | 15 |
| CP0603A6000EN | 5950 - 6050 | 9.7 | 1.4 | 12 | 14 |



Coupler P/N CP603AxxxxFN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836FN | 824 - 849 | 31.2 | 0.20 | 32 | 12 |
| CP0603A0881FN | 869 - 894 | 30.8 | 0.20 | 32 | 12 |
| CP0603A0902FN | 890 - 915 | 30.5 | 0.20 | 30 | 12 |
| CP0603A0947FN | 935 - 960 | 30.2 | 0.20 | 30 | 12 |
| CP0603A0897FN | 880 - 915 | 30.5 | 0.20 | 30 | 12 |
| CP0603A0942FN | 925 - 960 | 30.2 | 0.20 | 30 | 12 |
| CP0603A1441FN | 1429 - 1453 | 27.0 | 0.25 | 28 | 12 |
| CP0603A1747FN | 1710 - 1785 | 25.0 | 0.25 | 27 | 12 |
| CP0603A1842FN | 1805 - 1880 | 26.5 | 0.25 | 27 | 12 |
| CP0603A1880FN | 1850 - 1910 | 24.3 | 0.25 | 27 | 12 |
| CP0603A1960FN | 1930 - 1990 | 24.0 | 0.25 | 28 | 12 |
| CP0603A1907FN | 1895 - 1920 | 24.2 | 0.25 | 27 | 12 |
| CP0603A1890FN | 1880 - 1900 | 24.2 | 0.25 | 27 | 12 |
| CP0603A2442FN | 2400 - 2484 | 21.5 | 0.25 | 25 | 12 |
| CP0603A3500FN | 3450 - 3550 | 17.8 | 0.33 | 20.0 | 13 |
| CP0603A5000FN | 4950 - 5050 | 15.4 | 0.62 | 14.86 | 12 |
| CP0603A5500FN | 5450 - 5550 | 14.8 | 0.86 | 13.58 | 12 |
| CP0603A6000FN | 5950 - 6050 | 14.3 | 1.02 | 12.58 | 11 |



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

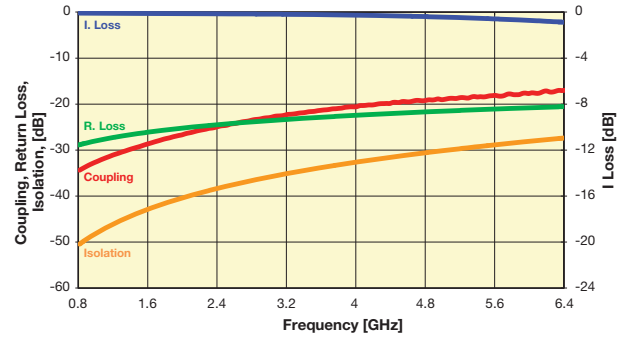
CP0603 High Directivity LGA Type



Coupler P/N CP603AxxxxGN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836GN | 824 - 849 | 34.2 | 0.20 | 30 | 13 |
| CP0603A0881GN | 869 - 894 | 33.8 | 0.20 | 30 | 13 |
| CP0603A0902GN | 890 - 915 | 33.6 | 0.20 | 30 | 13 |
| CP0603A0947GN | 935 - 960 | 33.2 | 0.20 | 29 | 13 |
| CP0603A0897GN | 880 - 915 | 33.6 | 0.20 | 30 | 13 |
| CP0603A0942GN | 925 - 960 | 33.2 | 0.20 | 29 | 13 |
| CP0603A1441GN | 1429 - 1453 | 30.0 | 0.25 | 25 | 13 |
| CP0603A1747GN | 1710 - 1785 | 28.5 | 0.25 | 24 | 13 |
| CP0603A1842GN | 1805 - 1880 | 28.0 | 0.25 | 24 | 13 |
| CP0603A1880GN | 1850 - 1910 | 27.7 | 0.25 | 24 | 13 |
| CP0603A1960GN | 1930 - 1990 | 27.5 | 0.25 | 23 | 13 |
| CP0603A1907GN | 1895 - 1920 | 27.6 | 0.25 | 24 | 13 |
| CP0603A1890GN | 1880 - 1900 | 27.7 | 0.25 | 24 | 13 |
| CP0603A2442GN | 2400 - 2484 | 25.5 | 0.25 | 22 | 13 |
| CP0603A3500GN | 3450 - 3550 | 21.6 | 0.31 | 20 | 13 |
| CP0603A5000GN | 4950 - 5050 | 19 | 0.39 | 16 | 12 |
| CP0603A5500GN | 5450 - 5550 | 18.5 | 0.57 | 15 | 12 |
| CP0603A6000GN | 5950 - 6050 | 18.0 | 0.74 | 14 | 11 |

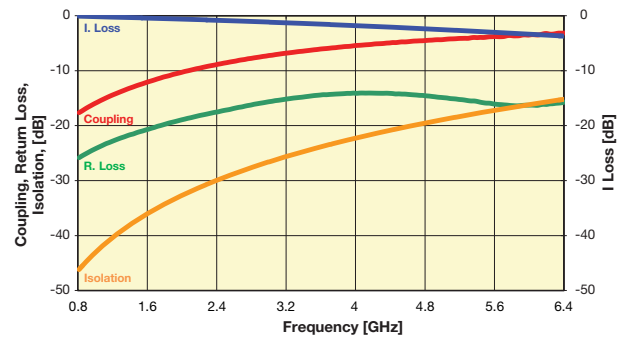
CP0603AxxxxGNTR



Coupler P/N CP603AxxxxHN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836HN | 824 - 849 | 17.3 | 0.30 | 26 | 26 |
| CP0603A0881HN | 869 - 894 | 17.0 | 0.30 | 25 | 26 |
| CP0603A0902HN | 890 - 915 | 16.7 | 0.30 | 25 | 26 |
| CP0603A0947HN | 935 - 960 | 16.3 | 0.35 | 25 | 26 |
| CP0603A0897HN | 880 - 915 | 17.0 | 0.35 | 25 | 26 |
| CP0603A0942HN | 925 - 960 | 16.3 | 0.35 | 25 | 26 |
| CP0603A1441HN | 1429 - 1453 | 13.0 | 0.55 | 22 | 26 |
| CP0603A1747HN | 1710 - 1785 | 11.4 | 0.75 | 20 | 24 |
| CP0603A1842HN | 1805 - 1880 | 11.0 | 0.75 | 20 | 24 |
| CP0603A1880HN | 1850 - 1910 | 10.8 | 0.75 | 19 | 24 |
| CP0603A1960HN | 1930 - 1990 | 10.5 | 0.75 | 19 | 24 |
| CP0603A1907HN | 1895 - 1920 | 10.7 | 0.75 | 19 | 24 |
| CP0603A1890HN | 1880 - 1900 | 10.8 | 0.75 | 19 | 24 |
| CP0603A2442HN | 2400 - 2484 | 8.8 | 1.00 | 17 | 24 |
| CP0603A3500HN | 3450 - 3550 | 5.9 | 1.48 | 25 | 21 |
| CP0603A5000HN | 4950 - 5050 | 4.4 | 2.59 | 22 | 18 |
| CP0603A5500HN | 5450 - 5550 | 4 | 2.95 | 22 | 17 |
| CP0603A6000HN | 5950 - 6050 | 3.5 | 3.37 | 21 | 17 |

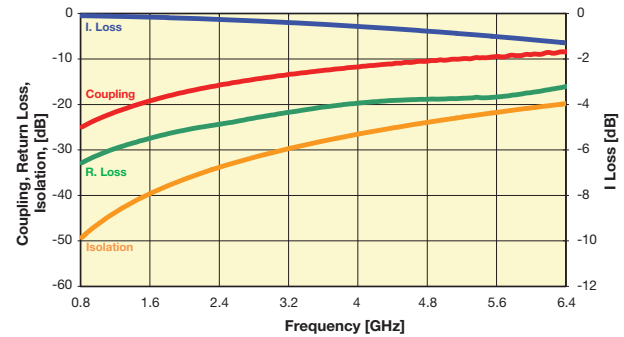
CP0603AxxxxHNTR



Coupler P/N CP603AxxxxMN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836MN | 824 - 849 | 24.2 | 0.20 | 33 | 23 |
| CP0603A0881MN | 869 - 894 | 23.8 | 0.20 | 32 | 23 |
| CP0603A0902MN | 890 - 915 | 23.4 | 0.20 | 32 | 23 |
| CP0603A0947MN | 935 - 960 | 23.2 | 0.20 | 32 | 23 |
| CP0603A0897MN | 880 - 915 | 23.4 | 0.20 | 32 | 23 |
| CP0603A0942MN | 925 - 960 | 23.2 | 0.20 | 32 | 23 |
| CP0603A1441MN | 1429 - 1453 | 20.0 | 0.25 | 28 | 23 |
| CP0603A1747MN | 1710 - 1785 | 18.4 | 0.25 | 27 | 20 |
| CP0603A1842MN | 1805 - 1880 | 18.0 | 0.25 | 26 | 20 |
| CP0603A1880MN | 1850 - 1910 | 17.8 | 0.25 | 26 | 20 |
| CP0603A1960MN | 1930 - 1990 | 17.5 | 0.25 | 26 | 20 |
| CP0603A1907MN | 1895 - 1920 | 17.7 | 0.25 | 26 | 20 |
| CP0603A1890MN | 1880 - 1900 | 17.8 | 0.25 | 26 | 20 |
| CP0603A2442MN | 2400 - 2484 | 15.6 | 0.35 | 24 | 20 |
| CP0603A3500MN | 3450 - 3550 | 12.8 | 0.58 | 18 | 20 |
| CP0603A5000MN | 4950 - 5050 | 10.2 | 1.0 | 15 | 16 |
| CP0603A5500MN | 5450 - 5550 | 9.7 | 1.2 | 15 | 14 |
| CP0603A6000MN | 5950 - 6050 | 8.9 | 1.5 | 13.5 | 9 |

CP0603AxxxxMNTR



Important: Couplers can be used at any frequency within the indicated range.



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Thin-Film RF/Microwave Directional Couplers

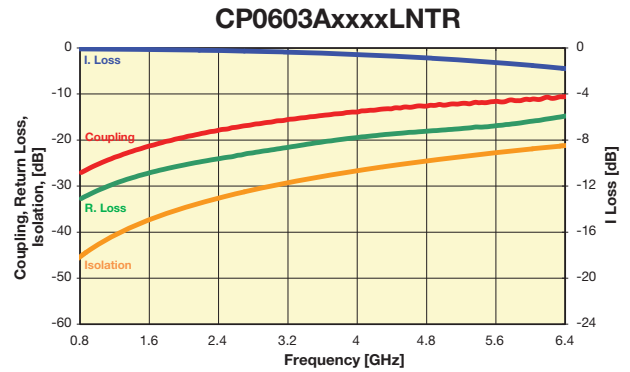
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 High Directivity LGA Type



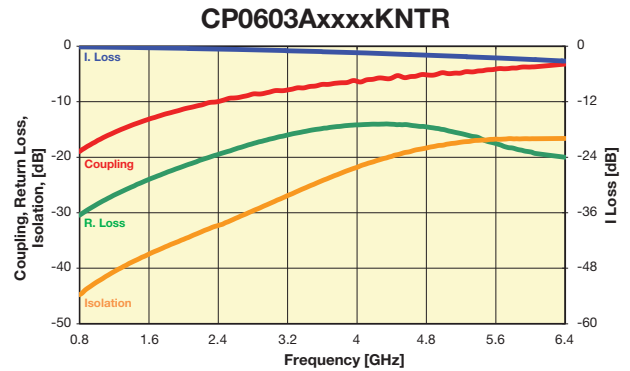
Coupler P/N CP603AxxxxLN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836LN | 824 - 849 | 26.89 | 0.08 | 32.5 | 18 |
| CP0603A0881LN | 869 - 894 | 26.55 | 0.08 | 32.2 | 18 |
| CP0603A0902LN | 890 - 915 | 26.2 | 0.09 | 31.9 | 18 |
| CP0603A0947LN | 935 - 960 | 25.87 | 0.09 | 31.5 | 18 |
| CP0603A0897LN | 880 - 915 | 26.2 | 0.09 | 31.9 | 18 |
| CP0603A0942LN | 925 - 960 | 25.87 | 0.09 | 31.5 | 18 |
| CP0603A1441LN | 1429 - 1453 | 22.31 | 0.12 | 28.1 | 17.5 |
| CP0603A1747LN | 1710 - 1785 | 20.51 | 0.15 | 26.4 | 16.5 |
| CP0603A1842LN | 1805 - 1880 | 20.03 | 0.15 | 26 | 16.5 |
| CP0603A1880LN | 1850 - 1910 | 19.87 | 0.16 | 26 | 16.5 |
| CP0603A1960LN | 1930 - 1990 | 19.57 | 0.17 | 25.5 | 16.5 |
| CP0603A1907LN | 1895 - 1920 | 19.77 | 0.16 | 25.7 | 16.5 |
| CP0603A1890LN | 1880 - 1900 | 19.87 | 0.16 | 25.8 | 16.5 |
| CP0603A2442LN | 2400 - 2484 | 17.7 | 0.22 | 23.9 | 16.5 |
| CP0603A3500LN | 3450 - 3550 | 14.85 | 0.56 | 20.6 | 16 |
| CP0603A5000LN | 4950 - 5050 | 12.4 | 0.95 | 17.8 | 11 |
| CP0603A5500LN | 5450 - 5550 | 11.83 | 1.2 | 17.1 | 9 |
| CP0603A6000LN | 5950 - 6050 | 11.08 | 1.33 | 15.9 | 9 |



Coupler P/N CP603AxxxxKN

| P/N Examples* | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603A0836KN | 824 - 849 | 18.5 | 0.14 | 30 | 26 |
| CP0603A0881KN | 869 - 894 | 18.1 | 0.14 | 29 | 26 |
| CP0603A0902KN | 890 - 915 | 17.6 | 0.15 | 29 | 26 |
| CP0603A0947KN | 935 - 960 | 17.3 | 0.15 | 29 | 25 |
| CP0603A0897KN | 880 - 915 | 17.9 | 0.147 | 29 | 25 |
| CP0603A0942KN | 925 - 960 | 17.6 | 0.15 | 29 | 25 |
| CP0603A1441KN | 1429 - 1453 | 14 | 0.27 | 25 | 25 |
| CP0603A1747KN | 1710 - 1785 | 12.4 | 0.36 | 23 | 24 |
| CP0603A1842KN | 1805 - 1880 | 12 | 0.39 | 22.5 | 24 |
| CP0603A1880KN | 1850 - 1910 | 11.8 | 0.4 | 22 | 24 |
| CP0603A1960KN | 1930 - 1990 | 11.4 | 0.44 | 22 | 24 |
| CP0603A1907KN | 1895 - 1920 | 11.5 | 0.43 | 22 | 24 |
| CP0603A1890KN | 1880 - 1900 | 11.7 | 0.41 | 22 | 24 |
| CP0603A2442KN | 2400 - 2484 | 9.7 | 0.6 | 19 | 23 |
| CP0603A3500KN | 3450 - 3550 | 7.2 | 1.15 | 15 | 19 |
| CP0603A5000KN | 4950 - 5050 | 4.7 | 2.15 | 15 | 13 |
| CP0603A5500KN | 5450 - 5550 | 4.2 | 2.5 | 17 | 13 |
| CP0603A6000KN | 5950 - 6050 | 3.7 | 2.8 | 19 | 13 |



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0402 / CP0603 High Directivity Couplers Test Jigs

GENERAL DESCRIPTION

These jigs are designed for testing the CP0402 and CP0603 High Directivity Couplers using a Vector Network Analyzer.

They consist of a dielectric substrate, having 50Ω microstrips as conducting lines and a bottom ground plane located at a distance of 0.254mm (0.010") from the microstrips.

The substrate used is Neltec's NH9338ST0254C1BC.

The connectors are SMA type (female), 'Johnson Components Inc.' Product P/N: 142-0701-841.

Both a measurement jig and a calibration jig are provided.

The calibration jig is designed for a full 2-port calibration, and consists of an open line, short line and through line. LOAD calibration can be done by a 50Ω SMA termination.

MEASUREMENT PROCEDURE

When measuring a component, it can be either soldered or pressed using a non-metallic stick until all four ports touch the appropriate pads. Set the VNA to the relevant frequency band. Connect the VNA using a 10dB attenuator on the jig terminal connected to port 2. Follow the VNA's instruction manual and use the [calibration jig](#) to perform a full 2-Port

calibration in the required bandwidths.

Place the coupler on the [measurement jig](#) as follows:

| | | | |
|------------------|---------------------|-----------------------|---------------------|
| Input (Coupler) | ↗ Connector 1 (Jig) | Termination (Coupler) | ↗ Connector 3 (Jig) |
| Output (Coupler) | ↘ Connector 2 (Jig) | Coupling (Coupler) | ↘ Connector 4 (Jig) |

To measure I. Loss connect:

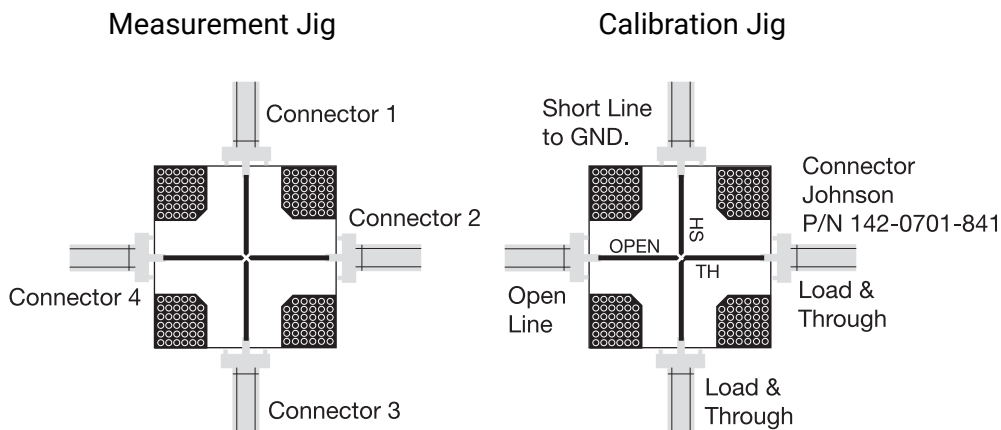
| | |
|----------------------------------|-------------------------|
| Connector 1 (Jig) ↗ Port 1 (VNA) | Connector 3 (Jig) ↗ 50Ω |
| Connector 2 (Jig) ↘ Port 2 (VNA) | Connector 4 (Jig) ↘ 50Ω |

To measure R. Loss and Coupling connect:

| | |
|----------------------------------|----------------------------------|
| Connector 1 (Jig) ↗ Port 1 (VNA) | Connector 3 (Jig) ↗ 50Ω |
| Connector 2 (Jig) ↘ 50Ω | Connector 4 (Jig) ↘ Port 2 (VNA) |

To measure Isolation connect:

| | |
|----------------------------------|----------------------------------|
| Connector 1 (Jig) ↗ 50Ω | Connector 3 (Jig) ↗ 50Ω |
| Connector 2 (Jig) ↘ Port 1 (VNA) | Connector 4 (Jig) ↘ Port 2 (VNA) |



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